Remarks

Prior to this amendment, claims 11-13, 18-33 and 46-60 were pending in this application. Claims 11, 13, 20, 23, 57, and 60 are amended and new claims 61-73 are added herein. Claims 12, 19, 26-33, 46-54, 58, and 59 are canceled herein.

Claim 60 is amended, and new claims 61-73 are added, to be directed to specific subcombinations of the differentiation factors recited in claims 11 and 23 (GM-CSF, IL-4, TNF-α, or a subcombination thereof). Applicants respectfully submit that as the subject matter of claims 60-73 is encompassed by claims 11 or 23, these claims should be examined together.

Support for the amendment of claims 11 and 23 can be found in the specification at least at page 64, lines 8-14; page 72, lines 16-20; page 74, lines 24-26 and 31-32; page 76, lines 5-6; and page 77, lines 2-20; page 79, lines 27-28. Support for the amendment of claim 57 can be found in the specification at least at page 25, lines 14-16; page 72, lines 26-29; and page 77, lines 27-29. Support for the amendment of claim 60 can be found in the specification at least at page 64, lines 6-14 and page 72, lines 14-20. Support for new claims 61, 65, and 69 can be found in the specification at least at page 47, lines 1-8 and page 49, lines 9-23. Support for new claims 62, 66, and 70 can be found in the specification at least at page 77, lines 2-20. Support for new claims 63, 67, and 71 can be found in the specification at least at page 64, lines 12-14. Support for new claim 64 can be found in the specification at least at page 74, lines 30-32 and page 76, lines 2-9. Support for new claim 68 can be found in the specification at least at page 77, lines 2-20; page 79, lines 27-28. Support for new claims 72 and 73 can be found in the specification at least at page 77, lines 2-20. Claim 59 is amended to correct dependency.

No new matter has been added in this amendment. Applicants reserve the right to pursue any removed subject matter in a related application. After entry of this amendment, **claims 11, 13, 18, 20-25, 55-57, and 60-73 are pending**.

Examiner Interview

Applicants thank Examiner Leavitt for the courtesy of a telephone interview with their

representative, Dr. Anne Carlson, on May 11, 2010. Although agreement was not reached on the final language of all of the claims, Applicants believe that the claims submitted herewith are in accordance with the telephone interview.

Withdrawal of Claim Rejections

Applicants thank Examiner Leavitt for withdrawing the rejection of claims 11-13, 18-25, 55-59 under 35 U.S.C. 103(a).

Claim Rejections Under 35 U.S.C. §112, first paragraph (enablement)

Claims 11-13, 18-25, and 55-60 are rejected under 35 U.S.C. §112, first paragraph as allegedly lacking enablement because the specification "does not reasonably provide enablement for a method of inducing maturation of an immature macrophage or an immature dendritic cell with a DDR1-activating antibody that specifically binds DDR1 thereby inducing maturation of the immature macrophage or the immature dendritic cell" (Office action at page 7). Applicants respectfully disagree. Claims 12, 19, 58, and 59 are canceled, rendering the rejection of these claims moot.

Solely to advance prosecution in this case, claims 11 and 23 are amended to recite that the method comprises contacting the immature macrophage or the immature dendritic cell with a DDR1-activating antibody that specifically binds DDR1 in the presence of a differentiation agent that comprises "granulocyte-macrophage-colony stimulating factor (GM-CSF), interleukin-4 (IL-4), tumor necrosis factor-α (TNF-α), or a combination thereof" and wherein the DDR1-activating antibody "enhances the differentiation agent-mediated maturation of the immature macrophage or the immature dendritic cell." Applicants submit that, aside from reciting the factors in the alternative (GM-CSF, IL-4, TNF-α, or a combination thereof), amended claims 11 and 23 are within the scope the Examiner determined to be enabled (see Office action at page 7). With regard to the alternative recitation of "granulocyte-macrophage-colony stimulating factor (GM-CSF), interleukin-4 (IL-4), tumor necrosis factor-α (TNF-α), or a combination thereof" in amended claims 11 and 23, the specification provides numerous working examples that immature dendritic cells or immature macrophages can be contacted with factors such as GM-CSF, IL-4, or TNF-α, either alone or in combination, in order to differentiate these cells.

For example, the specification at page 64, lines 6-14 and page 72, lines 14-20 shows that monocytes (immature macrophages) are differentiated into macrophages with GM-CSF and then stimulated with a DDR1-activating anti-DDR1 antibody to enhance the maturation of the macrophages, as demonstrated by the up-regulation of monocyte chemoattractant protein-1 (MCP-1) by these cells. In addition, the specification at page 76, lines 25-31 and page 79, lines 23-30 shows that TNF-α–induced dendritic cell maturation, in the presence of an agonistic anti-DDR1 antibody, enhanced the maturation of the dendritic cells, as demonstrated by the up-regulation of cell surface markers. TNF-α–induced dendritic cell maturation, in the presence of an agonistic anti-DDR1 antibody, also up-regulated the antigen-presenting activity of these cells (specification at page 77, lines 2-20). Furthermore, monocytes incubated with the combination of GM-CSF, IL-4, and TNF-α in the presence of an agonistic anti-DDR1 antibody, enhanced the maturation of the dendritic cells, as demonstrated by the up-regulation of specific cell surface markers on these cells (see the specification at page 74, lines 30-32 and page 76, lines 2-31). Thus, the claims as amended are fully enabled for "granulocyte-macrophage-colony stimulating factor (GM-CSF), interleukin-4 (IL-4), tumor necrosis factor-α (TNF-α), or a combination thereof." Claims 13, 18, 20-22, 24, 25, and 55-57 depend from claims 11 or 23, and incorporate all the limitations thereof. Claim 60 is amended to recite that the immature macrophage or immature dendritic cell is contacted with a DDR1-activating antibody that specifically binds DDR1 in the presence of a differentiation agent that comprises GM-CSF, as shown in the specification at page 64, lines 6-14 and page 72, lines 14-20 (discussed above). In view of the amendment of claims 11, 23, and 60, and the above discussion, Applicants respectfully request that the rejection of claims 11, 13, 18, 20-25, 55-57, and 60 be withdrawn.

Claim Rejection Under 35 U.S.C. §112, second paragraph

Claim 57 is rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to point out what is included or excluded by the claim language. Applicants disagree. However, solely to advance prosecution in this case, claim 57 is amended to recite that "the DDR1-activating antibody up-regulates and releases chemokines or cytokines from a mature dendritic cell." Support for this amendment can be found in the specification at least at page 25, lines 14-16; page 72, lines 26-29; and page 77, lines 27-29. In view of the amendment of claim

57, Applicants respectfully submit that this claim is clear and definite, and request that the rejection of claim 57 be withdrawn.

Claim Rejections Under 35 U.S.C. §112, first paragraph – New Matter

Claims 12, 13, and 57 are rejected under 35 U.S.C. §112, first paragraph (new matter) as allegedly failing to comply with the written description requirement. Applicants respectfully disagree. Claim 12 is canceled, rendering the rejection of this claim moot.

In view of the amendment of claim 11 to refer to the presence of a differentiation agent that comprises GM-CSF, IL-4, TNF-α or a combination thereof (discussed above), the specification clearly discloses the subject matter of claim 13 (which is dependent upon claim 11), wherein immature macrophages and immature dendritic cells are contacted with both a differentiation agent and an agent that up-regulates DDR1 expression (see the specification, for example, at page 47, lines 1-8; page 49, lines 9-23; and page 82, lines 5-9). The specification also clearly discloses the subject matter of claim 57 (which is also dependent upon claim 11), wherein contacting an immature macrophage or an immature dendritic cell with both a DDR1-activating antibody and a differentiation agent up-regulates and releases chemokines or cytokines from a mature macrophage or dendritic cell (see the specification at least at page 25, lines 14-16; page 72, lines 26-29; and page 77, lines 27-29).

Applicants thank Examiner Leavitt for informing Applicants representative during the May 11, 2010 telephone interview that the amendment of claim 11 would overcome this rejection of claims 13 and 57. In view of the subject matter addressed during the telephone interview and the above discussion, Applicants respectfully request that the rejection of claims 13 and 57 be withdrawn.

Request for Examiner Interview

Applicants believe the application is in condition for allowance and such action is requested. If an additional rejection is asserted, or if the present rejections are maintained, Examiner Leavitt is formally requested to contact the undersigned in order to arrange a telephonic interview prior to issuance of the next Office action. It is believed that a brief discussion of the merits of the present application may expedite prosecution. This request is being submitted under MPEP §713.01, which indicates that an interview can be arranged in advance by a written request.

Respectfully submitted,

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